

INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2004/011259

A. CLASSIFICATION OF SUBJECT MATTER

Int.Cl⁷ B66C13/06, B66C13/22

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Int.Cl⁷ B66C13/00-13/56

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

| | | | |
|---------------------------|-----------|----------------------------|-----------|
| Jitsuyo Shinan Koho | 1922-1996 | Jitsuyo Shinan Toroku Koho | 1996-2004 |
| Kokai Jitsuyo Shinan Koho | 1971-2004 | Toroku Jitsuyo Shinan Koho | 1994-2004 |

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|-----------|--|-----------------------|
| X | US 6442439 B1 (Rush D. Robinett), | 4-7 |
| Y | 27 August, 2002 (27.08.02), Full text; Figs. 1 to 9 (Family: none) | 1-3 |
| Y | JP 1-177982 A (Mitsubishi Heavy Industries, Ltd.), 14 July, 1989 (14.07.89), Claims; Fig. 2 (Family: none) | 1-3 |
| A | JP 8-253950 A (Yanmar Diesel Engine Co., Ltd.), 01 October, 1996 (01.10.96), (Family: none) | 1-7 |

☒ Further documents are listed in the continuation of Box C.☐ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

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"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

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"&" document member of the same patent family

Date of the actual completion of the international search
08 November, 2004 (08.11.04)Date of mailing of the international search report
22 November, 2004 (22.11.04)Name and mailing address of the ISA/
Japanese Patent Office

Authorized officer

Facsimile No.

Telephone No.

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| C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT | | |
|---|---|-----------------------|
| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
| A | US 5908122 A (Rush D. Robinett), 01 June, 1999 (01.06.99), (Family: none) | 1-7 |
| A | WO 02/070388 A1 (NATIONAL UNIVERSITY OF SINGAPORE), 12 September, 2002 (12.09.02), & US 2002/0158036 A1 & EP 1373118 A & JP 2004-521839 A | 1-7 |
| A | WO 02/000543 A2 (SANDIA CORP.), 03 January, 2002 (03.01.02), & US 6496765 B1 | 1-7 |
| A | Kiyoshi TAKAGI, Hidekazu NISHIMURA, "Tower Crane no tsurini Rope-cho Hendo ni Taisuru Kifuku Senkai Hoko no Gain Scheduled Bunsan Seigyo", Transactions of the Japan Society of Mechanical Engineers, Series C, 25 April, 2003 (25.04.03), Vol.69, No.680, pages 914 to 922 | 1-7 |